

Atty Dkt. No.: 10990640-2
USSN: 10/059,957

AMENDMENTS TO THE CLAIMS

IN THE CLAIMS:

1. (Currently Amended) An apparatus for fabricating an array of biopolymers on a substrate, comprising:
 - (a) a substrate station on which the substrate can be mounted;
 - (b) a dispensing head having: a reservoir chamber; at least one jet which can dispense droplets of at least one of a biomonomer and a biopolymer onto a substrate, the jet including a capillary delivery chamber communicating with the reservoir chamber, and which capillary delivery chamber has an orifice and an ejector which, when activated, causes a droplet to be ejected from the orifice;
 - (c) a cleaning station which is spaced from the substrate station, and which provides a cleaning fluid for the head;
 - (d) a purge station for removing fluid from the dispensing head; and a positioning system to selectively position the head facing any one of the stations;
 - (e) a positioning system to selectively position the head facing any one of the stations; a pressure source to provide to the reservoir chamber, when the head is facing the cleaning station, a holdoff pressure which is sufficiently positive to prevent cleaning fluid contacting the orifice from entering the delivery chamber;
 - (f) ~~a processor which causes the pressure source to provide the holdoff pressure when the head is facing the cleaning station.~~
2. (Original) An apparatus according to claim 1 wherein the head has multiple pulse jets with orifices on a common front face of the head.
3. (Original) An apparatus according to claim 3 wherein the cleaning station comprises a pad to carry a cleaning fluid and the positioning system, when the head is facing the cleaning station, wipes at least one of the head and pad across the other.
4. (Currently Amended) A method for loading a dispensing head with a biopolymer or biomonomer

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containing fluid, the dispensing head having:

a reservoir chamber; and

multiple jets which can dispense droplets onto a substrate and include respective delivery chambers communicating with the same reservoir chamber, each delivery chamber having an orifice and an ejector which, when activated, causes a droplet to be ejected from the orifice;

the method comprising:

(a) loading the fluid through an exit end of an orifice into a reservoir chamber communicating with the orifice; and

(b) loading fluid which has entered the reservoir through an orifice into other delivery chambers communicating with the same reservoir chamber.

5. (Original) A method according to claim 4 wherein the fluid is drawn into the delivery and reservoir chambers.

6. (Original) A method according to claim 4 wherein the delivery chambers are capillary delivery chambers.

7. (Original) A method according to claim 4 wherein the reservoir is a capillary reservoir.

8. (Original) A method according to claim 4 wherein a negative pressure is provided to the reservoir chamber to assist in the drawing of the fluid through the orifice.

9. (Original) A method according to claim 4 wherein the head has multiple reservoirs and a set of the multiple jets for each reservoir, and wherein (a) and (b) occurs at each of multiple reservoirs.

10. (Currently Amended) A method of fabricating an array of biopolymers on a substrate using a dispensing head with biopolymer or biomonomer fluids, the fluid dispensing head having:

a reservoir chamber;

multiple jets which can dispense droplets onto a substrate, each jet including a delivery chamber communicating with the reservoir chamber, and including an orifice and an ejector which, when activated, causes a droplet to be ejected from the orifice;

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the method comprising:

- (a) loading the head through orifices of the jets with biopolymer or biomonomer fluids;
- (ab) positioning the head with the orifices facing the substrate;
- (bc) dispensing multiple droplets from the head orifices so as to form an array of droplets on the substrate;
- (cd) positioning the head with the orifices facing a cleaning station which is spaced from the substrate;
- (de) exposing the head about the orifices to a cleaning fluid from the cleaning station; and
- (ef) repeating (a) to (ef) as needed so as to form the array.

11. (Original) A method according to claim 10 wherein the cleaning station comprises a pad carrying cleaning fluid and the head is exposed to the cleaning fluid by wiping at least one of the head and pad across the other.

12. (Original) A method according to claim 4 wherein the fluid is a polynucleotide containing fluid.

13. (Original) A method according to claim 4 wherein the fluid is a polymer of amino acids.

14. (Original) A method according to claim 10 wherein the fluids are polynucleotide containing fluids.

15. (Original) A method according to claim 10 wherein the fluids contain amino acid polymers.

16. (New) The method of Claim 1 wherein said apparatus further comprises a pressure source to provide to the reservoir chamber, when the head is facing the cleaning station, a holdoff pressure which is sufficiently positive to prevent cleaning fluid contacting the orifice from entering the delivery chamber.

17. (New) The method of Claim 16 further comprising a processor which causes the pressure source to provide the holdoff pressure when the head is facing the cleaning station.